# GOLD

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Domestic gold mine production in 2002 fell to its lowest level since 1991. Primarily, the 11% drop from 2001 output resulted from a continuing trend toward consolidation of major gold companies. Although annual gold output fell by almost 40,000 kilograms (kg) in 2002, the value of U.S. gold production increased to about $3.0 billion in 2002. Stronger gold prices and a weakening U.S. dollar in the global economy toward the end of 2002 encouraged an increase in gold output for 2003. The United States has been the world's second largest gold producer (behind South Africa) since 1991, when its output surpassed that of the Soviet Union for the first time in five decades. Nevada accounted for more than 80% of domestic production in 2002. The remaining output came from nine other States. Gold was produced at 53 lode mines and numerous small placer mines (mostly in Alaska and Western States). In addition, a small amount of domestic gold was produced as a byproduct of processing base metals, principally copper. Thirty mines yielded almost 99% of the gold produced in the United States.

Domestic gold exploration activity dropped on a total dollar basis for the fifth consecutive year, declining sharply to $77.2 million in 2002 from $107.2 million in 2001. The percentage of the total world gold exploration budget going to the United States decreased to 9.9% in 2002 from 12.6% in 2001—while worldwide gold exploration expenditures dropped by 8% from 2001, and 22% from 2000 (diGesu and others, 2003).

Commercial–grade refined gold came from about two dozen domestic producers. Of several thousand companies and artisans, a few dozen companies dominated the fabrication of gold into commercial products. U.S. jewelry manufacturing was heavily concentrated in the New York, NY, and the Providence, RI, areas, with other concentrations in California, Florida, and Texas. In 2002, estimated end uses of gold were jewelry and arts, 84%; dental, 8%; electrical and electronics, 7%; and other 1%.

According to the World Gold Council (2003, p. 1), 2002 was the 12th consecutive year of unit sales increases for gold jewelry in the United States. Total U.S. gold jewelry sales exceeded $15.9 billion, up by 2% from sales in 2001.

International trade in refined bullion comprised 79% of U.S. gold imports and 72% of gold exports; net exports of bullion decreased to 13,000 kg, down by more than 94% from that of 2001. Canada provided more than 80% of the bullion imported, and Switzerland was the destination for more than 51% of the bullion exported (tables 4 and 6).

The dollar price for gold rose throughout 2002, with the average price 14% more than the average gold price in 2001. Engelhard Corp.'s daily price of gold in 2002 ranged from a low of nearly $279 per troy ounce[1] on January 29 to a high of about $351 per ounce on December 27. The average for the year was, to the nearest dollar, $311 per ounce. The previous year's prices ranged from about $257 per ounce to $294 per ounce and averaged $272 per ounce.

The 12-month London gold lease rates in 2002 decreased steadily from about 1.1% in January to 0.5% in December. Short-term lease rates dropped to new lows near zero by the end of the year from the January high of 0.3% (CRU International Ltd., 2003).

Total world mine production of gold was about the same as the record level reached in 2001. South Africa increased its annual output after six successive declines and remained the largest gold producer among more than 80 gold-mining nations, followed by the United States, Australia, China, and Russia. Identified world gold resources at yearend 2002 were estimated to be 100 million kilograms (Mkg), of which 15% to 20% were byproduct resources; the world reserve base was estimated to be 89 Mkg, and reserves were 42.5 Mkg. [This report uses the resource and reserve terminology of the U.S. Geological Survey (USGS), which is published annually in USGS Mineral Commodity Summaries.] South Africa had about 50% of the world resources, 46% of the reserve base, and 38% of the reserves. The United States had about 9% of the resources, 7% of the reserve base, and 13% of the reserves.

About 15% of all gold mined is estimated to have been used in dissipative industrial uses or is either unaccounted for or unrecoverable (Thomas and Boyle, 1986, p. 6). Therefore, of an estimated 143 Mkg of gold mined in historic times through 2002, 121 Mkg of gold remain; about 33 Mkg is held by central banks as official stocks and about 88 Mkg is held privately as bullion, coin, and jewelry.

In a USGS report on undiscovered gold deposits in the United States (U.S. Geological Survey, National Mineral Resource Assessment Team, 2000), the amount of gold in undiscovered U.S. mineral deposits is estimated to range between greater than 13 Mkg (90% probability) and greater than 22 Mkg (10% probability). The mean value of gold in the undiscovered deposits is 18 Mkg with nearly one-quarter of the gold estimated to be contained in undiscovered porphyry copper deposits. Other major gold deposit types considered in the report are hot spring gold, epithermal vein, plutonic porphyry gold, sediment-hosted gold, gold-silver-tellurium veins, and low-sulfide gold-quartz vein deposits. Total discovered gold resources in the United States were estimated to be 27 Mkg, of which identified U.S. gold resources were estimated to be 15 Mkg and all gold produced in the United States up to 2002 totaled 12 Mkg.

[1]In this report, "ounce" refers to troy ounce; 1 kilogram is equivalent to 32.2 troy ounces.

## Production

In this report, domestic mine production data for gold were derived from two voluntary USGS surveys of U.S. operations—one for monthly production of copper, gold, lead, silver, and zinc from lode mines and the other for the same types of data surveyed annually.

A survey was sent to all 53 lode gold producers believed to be operational in 2002; 52 responded. Nine of the 52 respondents reported that their mines were closed and another 2 remained on care-and-maintenance status by the end of 2002. The individual company production and performance data listed in table 3 and cited elsewhere in this report were obtained from published sources, such as company annual reports.

Of all gold produced domestically during 2002, about 93% was extracted from gold ore, and the remaining 7% was derived from other precious-metal ores, base-metal ores, and placer deposits. By comparison, similar data assembled for 1980 indicated a 63% to 37% ratio. In both years, the contribution from placer mines alone amounted to less than 2% of the total gold produced.

***Alaska.***—The State's Division of Geology and Geophysical Surveys reported that gold output increased to an estimated 17,400 kg (560,000 ounces) worth $173.5 million in 2002 from an 17,100 kg (551,000 ounces) worth $149 million in 2001, or an approximate increase in production of 2% and an increase in associated value of about 16% (Szumigala and Swainbank, 2003b). Placer production dropped to 620 kg (20,000 ounces) from 700 kg (23,000 ounces) of gold.

The underground Fort Knox gold mine operated by Kinross Gold Corp. near Fairbanks began to produce gold in 1997. Kinross reported that the mine produced about 12,800 kg (411,000 ounces) of gold in 2002, making it the country's seventh largest gold producer (Kinross Gold Corp., 2003a, p. 1).

The Greens Creek Mine on Admiralty Island, off Juneau, completed its sixth year at full production levels. Ore from the underground trackless mine was milled at the mine site. The smelter produced gold and silver doré, lead, zinc, and bulk concentrates. Szumigala and Swainbank (2003b, p. 13) reported that the mine produced 3,200 kg (103,000 ounces) of gold. Greens Creek was a joint venture between Kennecott Greens Creek Mining Co. (70.3%) and Hecla Mining Co. (29.7%).

USMX Inc.'s Illinois Creek gold mine in west–central Alaska was placed on care and maintenance. However, the mine continued to produce gold as the existing ore heaps were rinsed to extract the metal (Szumigala and Swainbank, 2003b, p. 11).

Nova Gold Resources Inc. completed its $10-million expenditure to earn a 70% interest in the Donlin Creek project from Placer Dome Inc. Measured and indicated resources at Donlin Creek were increased to 137 metric tons (t) (4.4 million ounces) of gold grading 5.2 grams per metric tons (g/t). Inferred resources increased to 193 t (6.2 million ounces) of gold grading 5.2 g/t. Total resources are estimated at 712 t (22.9 million ounces) of gold grading 2.8 g/t (Szumigala and Swainbank, 2003a, p. 51).

***California.***—Gold production in California decreased by more than 33% in 2002 (table 2). Glamis Gold Ltd., through its wholly owned Glamis Rand Mining Co., produced 2,100 kg (67,000 ounces) of gold at its Rand Mine, California's largest gold mine, near Randsburg. Mining operations will cease in 2003. Glamis also closed its Picacho gold mine in southern California after more than 20 years of operation (Glamis Gold Ltd., 2003, p. 1). In northern California, Barrick's McLaughlin Mine is no longer the State's largest gold producer; mining ceased in 1996, but gold continued to be processed from low-grade ore that was stockpiled during the life of the mine until the third quarter of 2002. The third largest gold producer, the Briggs Mine in southern California, is owned by Canyon Resources Corp. Most of the ore mined was produced from the Gold Tooth Pit. Lesser amounts of ore was mined from underground workings in the eastern section at the North Briggs Pit. Total gold produced was 1,800 kg (57,000 ounces) (Canyon Resources Corp., 2003).

Newmont Gold Company's Mesquite Mine, near Brawley, ceased mining operations in the second quarter of 2001 following the depletion of the main ore body. Production from residual heap leaching is expected to continue another year. A permitting process for expansion is underway.

Near the Nevada–California State line, in San Bernardino County, CA, the Castle Mountain Mine produced an estimated 1,750 kg (56,000 ounces) of gold. Residual gold production is expected to continue into 2004 as a result of continued heap leaching (MK Gold Company, 2003, p. 1). Castle Mountain was a joint venture between Viceroy Resource Corp. (75%) and MK Gold Company (25%).

***Colorado.***—Gold production in the State was 5% higher with an increase in production from the Nation's ninth largest gold mine, the Cresson Mine, in the Cripple Creek District of Teller County. AngloGold Ltd. (2003, p. 14) reported that this open pit mining operation produced 7,000 kg (225,000 ounces) of gold in 2002. An expansion of the Cresson Mine was completed late in 2002, which is expected to raise its annual gold output to about 11,200 kg (360,000 ounces) and extend the mine's life until 2012 (Mining Journal, 2002a).

A Colorado State Senate committee voted 5-2 to indefinitely postpone consideration of a bill that would have banned gold and silver mines from using cyanide in processing ore. The proposed bill had been amended to exclude current mining operations (Keller and Carroll, 2003, p. 61).

***Idaho.***—Meridian Gold Inc.'s closure of its Beartrack Mine near Salmon in 2001 left Idaho with no active gold mines. However, leaching of ore already extracted in 2001 continued in 2002. Beartrack produced more than 270 kg (8,700 ounces) of gold, less than one-half the output of 2001. Leaching of crushed ore is expected to continue to produce gold, with declining yields, for another year (Meridian Gold Inc., 2003, p. 7).

***Montana.***—Exploration for gold was strong during the early part of 2002 due to increasing gold prices. By July, however, the rush was over. Gold prices stagnated short of the threshold levels needed to sustain interest and investment dollars for exploration or development in the State (McCulloch, 2003, p. 80).

Placer Dome Inc.'s wholly owned Golden Sunlight Mine near Whitehall was Montana's largest gold-producing mine with 3,500 kg (111,800 ounces) of gold in 2002, about 43% less than in 2001. Mining of the open pit was completed in August. Future gold production will come from the processing of low-grade ore stockpiles, which should be completed in 2003 (Placer Dome Inc., 2003, p.

8).

***Nevada.—***Nevada maintained its longstanding position as the Nation's dominant gold–producing State. Of the Nation's top 30 gold-producing mines, 15 were in the State. Primary gold production decreased to 239,500 kg (7.7 million ounces).

Newmont Mining Company, the Nation's largest gold mining company in 2002, mined 84,500 kg (2.7 million ounces) of gold from 14 open pit operations, 5 underground mines, and 17 processing facilities in Elko, Eureka, Humboldt, and Pershing Counties (Newmont Gold Company, 2003, p. 18). Newmont reopened its Mule Canyon Mine in April and operated about 9 months until the ore was mined out. Newmont also mined gold in several small open pits at the Trenton Canyon Mine and also began to develop major projects, such as the Leeville underground mine (Platts Metals Week, 2002a).

Barrick Gold Corporation was the Nation's second largest gold mining company in 2002 and reportedly recovered 43,900 kg (1.4 million ounces) of gold at its Betze–Post Mine/Goldstrike in Eureka County. In nearby Elko County, Barrick continued the development of its Meikle Mine/Goldstrike, an underground operation that produced 19,900 kg (640,000 ounces) of gold; it was the Nation's largest underground gold mine (Barrick Gold Corporation, 2003, p. 5). The mine had an underground cooling system to keep temperatures around 27º C (80º F) even though the temperature of the surrounding rock can be as much as 60º C (140º F) (Gold News, 1998). These Barrick operations on the Carlin Trend were developed within a 2,800–hectare landholding known as the Goldstrike property. Barrick closed its Ruby Hill gold mine near Eureka in October. The open pit mine, which was opened in 1997, has reached the end of its reserve life (Platts Metals Week, 2002d).

Northwest of Elko, AngloGold Ltd., and Meridian Gold Inc. produced about 10,500 kg (337,000 ounces) of gold at its Jerritt Canyon Mine, the Nation's eighth largest gold mine (AngloGold Ltd., 2003, p. 14; Meridian Gold Inc., 2003, p. 3). Other gold mines in Humboldt County included the Hycroft (formerly the Crofoot/Lewis) and the Marigold Mines.

South of and parallel to the Carlin Trend, the Battle Mountain/Eureka Trend runs from southeastern Humboldt County southeast through Lander and Eureka Counties. Gold mining operations along this trend in Lander County include the McCoy/Cove gold and silver mine, which completed production in March, and is in full reclamation mode. In June, Echo Bay Mines Ltd. entered into a no cash sale of the entire McCoy/Cove complex to Newmont that includes all reclamation and closure obligations (Echo Bay Mines Ltd., 2002, p. 3). The country's third largest gold mine, the Cortez Mine in Lander County and owned by Placer Dome (60%) and Kennecott Minerals Company (40%), produced 33,600 kg (1.1 million ounces) (Placer Dome Inc., 2003, p. 8).

At Round Mountain, about 95 kilometers north of Tonopah, the Round Mountain Gold Corporation mine of Kinross Gold Corp. (50%) and Barrick Gold Corp. (50%) produced about 23,500 kg (755,000 ounces) of gold during the year (Kinross Gold Corp., 2003b, p. 22). The property is the fourth largest U.S. gold mine.

Newmont continued to develop the Rossi-Storm Deposit at the Midas Mine, which poured its first gold on December 9, 1998. Midas, previously named Ken Snyder, produced about 7,300 kg (233,000 ounces) of gold (Driesner and Coyner, 2003, p. 15).

Exploration also continued in the State. Newmont and Barrick pursued their interests within the major districts along the Carlin Trend. Newmont, Glamis Gold, Cordex, and others also were involved in the Battle Mountain and Iron Point districts of Lander and Humboldt Counties. Placer Dome further examined its Crossroads and Pediment deposits in the Bullion and Cortez Districts of Lander and Eureka Counties. Some excitement was generated by Midway Gold's high-grade vein discovery in the Rye Patch District of Nye County. Newmont is exploring the property (Tingley and Castor, 2003, p. 83).

***South Dakota.—***Gold production decreased by about 68% compared with that of 2001. Even though Barrick's 124–year–old Homestake Mine at Lead was shut down at the end of 2001, it will produce about 7,500 kg (240,000 ounces) of additional gold before closure. Barrick is expected to spend more than $66 million during 8 years of final reclamation and remediation (American Metal Market, 2000).

Goldcorp Inc. operated an open pit gold mine, the Wharf Mine, near Lead, which produced about 2,550 kg (82,000 ounces) of gold (Goldcorp Inc., 2003, p. 2).

***Utah.—***Rio Tinto Ltd.'s Bingham Canyon Mine, which was operated by Kennecott Utah Copper Corp., produced about 12,800 kg (412,000 ounces) of gold as a byproduct of its copper mining operations near Salt Lake City. Long ranked as one of the Nation's principal gold–producing mines, Bingham Canyon was the sixth largest gold producer in 2002. Kennecott also operated the nearby Barney's Canyon Mine, an open pit and heap–leaching operation that produced 2,330 kg (75,000 ounces) of gold (Rio Tinto Ltd., 2003, p. 4).

***Washington.—***Kinross' Kettle River underground mine, in the northeastern part of the State, produced 950 kg (30,600 ounces) of gold in its 12th year of production (Kinross Gold Corp., 2003b, p. 26).

**World Review**

World gold mine production decreased about 2% from the 2001 output. Fairly steep production drops from mines in the United States and Indonesia were not counteracted by an increase in Peru. According to its annual review of world gold supply and demand, Gold Fields Mineral Services Limited calculated that the total global supply of gold in 2002 was 3.98 Mkg (128 million ounces) compared with the previous year's total supply of 3.92 Mkg (126 million ounces) (Klapwijk and others, 2003, p. 7). Gold Fields Mineral Services also reported a decrease in mine production (1.4%); increases in official sector sales (5.1%); no net producer hedging; and no implied net disinvestment for sales of bars and coins by private investors. Old gold scrap levels increased sharply by almost 18% in 2002 after a 16% rise in 2001.

On the demand side, Gold Fields Mineral Services reported that total fabrication was 347,000 kg (11 million ounces), less than its 2001 level. Jewelry fabrication decreased by 349,000 kg (11.2 million ounces) to its lowest level since 1994, due mainly to lower

demand, particularly in India and Italy, the Middle East, and East Asia. Bar hoarding was up 2%, largely as a result of higher Japanese demand. Coin fabrication was up 22%, largely due to the doubling of new Canadian coins. The amount of gold used in the electronics market, which fell 28% in 2001 with lower demand for computers and other electronic products, rose slightly to 210,000 kg (6.75 million ounces). Many countries in Asia, particularly Japan, had sizeable gains in their electronics markets, but these gains were erased by losses in Europe (Klapwijk and others, 2003, p. 10).

With regard to gold exploration, the Metals Economics Group, Halifax, Nova Scotia, Canada, determined from its annual survey of exploration budgets for 724 companies that $784 million (45.2%) of the 2002 world exploration budget total for nonferrous metals was focused on gold, with 475 companies reporting active gold programs. The expenditures for gold were $66 million less than the $849 million (42.5% of the total) reported for gold exploration in 2001. As in the preceding 8 years, Latin America received the highest expenditure for gold C$207.6 million (26.5% of the reported 2002 world gold exploration dollars) (diGesu and others, 2003).

***Australia.***—Australian gold mine production dropped by about 4% from 2001. However, Australia retained its position as the world's third largest gold–producing nation. Of the 273,000 kg (8.8 million ounces) of gold mined in 2002, Western Australia, Queensland, and New South Wales accounted for about 70%, 10%, and 8%, respectively (Australian Bureau of Agricultural and Resource Economics, 2003, p. 15); Western Australia's production was derived principally from mining operations near Kalgoorlie. Other Australian gold–producing States, in descending order of output, were Northern Territory, Tasmania, Victoria, and South Australia.

Higher costs were reported at a number of gold mining operations. At the Paddington Mine costs were up 26% due, in part, to the increased processing costs associated with ore from the new White Foil deposit. In addition, a crown pillar failed at Sons of Gwalia's underground Gwalia mine that caused a shortfall in production and an increase in costs of 27%. Furthermore, lower than expected ore grades in the center pit of the Marvel Loch Mine contributed to a 15% rise in cash costs. Finally, the Super Pit Mine, Australia's largest gold producer, reported costs 4% higher due to lower recovery rates and higher unit mining and processing costs. Overall, the weighted average cash cost for Australian gold mines increased to $187 per ounce in 2002 from $175 per ounce in 2001 (Klapwijk and others, 2003, p. 41).

Directors at AurionGold Ltd. agreed to a $740 million takeover acquisition by Placer Dome Inc. Placer Dome had extended its offer many times while AurionGold searched unsuccessfully for a rival suitor. The takeover made Placer Dome the world's fifth largest gold mining company (American Metal Market, 2002a). Australia's gold industry is 70% owned by foreign mining companies, following Placer Dome's takeover of AurionGold. Overseas control of the Australian gold industry rose from 20% (5 years ago) to 30% by the end of 2000. In the wake of further takeovers, foreign ownership rose to 60% by early 2002. Latest gold production data show that North American companies control about 48%, with a split of 25% Canadian and 23% United States. South African-based companies account for 20%, while European groups have 2% (Platts Metals Week, 2002b).

Thunderbox Mine in Western Australia poured its first gold bar. The mine, which is a joint venture, 60% owned by LionOre Mining International Ltd. and 40% owned by Dalrymple Resources NL, is expected to produce 6,800 kg (220,000 ounces) of gold in 2003 (Mining Journal, 2002b).

***Brazil.***—During 2002, gold production declined 5% to 50,500 kg (1.6 million ounces). A moderate improvement came from the output of the informal, noncorporate mining sector, the garimpeiros. The largest decline in the corporate sector came from the Igarape Bahia Operation, which was closed in June and reported about a 5,000 kg (160,000 ounces) drop in gold output (Klapwijk and others, 2003, p. 37).

***Canada.***—Canada dropped to the seventh in the ranking of world gold producers, as its output decreased by more than 6% to 149,000 kg (4.79 million ounces). Canada's principal gold–producing Provinces were Ontario (51.5%), Quebec (22%), British Columbia (15%), and Manitoba (4%). Gold was also produced in Alberta, New Brunswick, Newfoundland, Nunavut, Saskatchewan, the Northwest Territories, and Yukon Territory. Despite a good performance from some of the largest operations, mine closures and lower grades at maturing mines combined continued to drive down full year gold production. The Red Lake Mine, Canada's largest, reported a 4% increase in gold output to over 16,000 kg (514,000 ounces). Additional production came from the Eskay Creek Mine, where higher mining and processing rates yielded a 12% rise in gold production to just over 11,000 kg (354,000 ounces), and the LaRhonde Mine, where output was also up 11% to over 8,000 kg (257,000 ounces) (Klapwijk and others, 2003, p. 36).

***Chile.***—Gold output in Chile decreased for the second consecutive year to 40,000 kg (1.3 million ounces), an 6% decline owing to continued mine closures. The closures included the El Indio Mine, which ceased operation in the middle of 2002, and the suspension of activities at the Refugio Mine in 2001. In addition, there was lower by product output at state-owned Codeloc's mining units (Klapwijk and others, 2003, p. 37).

***China.***—The Chinese produced an estimated 190,000 kg (6.1 million ounces) of gold in 2002, up 2.5% from the 185,000 kg (5.95 million ounces) of gold produced in 2001 (Antaike Precious & Minor Metals Monthly, 2003).

The Shanghai Gold Exchange (SGE) opened trading activities late in 2002, and thereby ended more than a half century of central bank dominance over China's gold industry. Initially, trade was limited to physical gold. China designated 42 warehouses across the country for gold deliveries, with the exchange charging a small fee equal to 0.06% of the transaction value. SGE has 108 founding members, comprised of 13 commercial banks, 24 gold firms and mines, 61 gold end users, 8 refineries, and 2 coin mints (American Metal Market, 2002b).

***India.***—India eased the importation of gold and silver jewelry by granting a general license for imports to Indian citizens. Before March 31, only a limited number of individuals were licensed to import gold or silver jewelry (Platts Metals Week, 2002c).

***Indonesia.***—Gold output dropped to 135,000 kg (4.34 million ounces) in 2002. Lower ore grades contributed to decreased output from the Grasberg Mine. The Gosowong Mine and the Minahasa Mine ceased mining late in 2001 but continued to process lower grade gold stockpiles (Klapwijk and others, 2003, p. 38).

***Mexico.—***Gold production was down to 20,600 kg (662,000 ounces) in 2002. This was despite the fact that gold production at La Herradura, Mexico's largest gold mine, rose to almost 4,800 kg (154,000 ounces) (Klapwijk and others, 2003, p. 37).

***Papua New Guinea.—***Gold production in Papua New Guinea dropped slightly to 65,200 kg (2.1 million ounces). Lower gold output from the Porgera Mine was a result of vandalism that damaged power line poles in the vicinity of the open pit mine (Klapwijk and others, 2003, p. 38).

***Peru.—***Latin America's largest gold producer reported an impressive 14% increase to reach 157,000 kg (5.05 million ounces) of gold output. Peru's largest gold mine, Yanacocha, contributed to the gain with 71,000 kg (2.28 million ounces) of gold, which was 20% more than in 2001. The increase in gold output was primarily due to higher grades and mining rates at the mine and extra output from the first full year contribution from the La Quinua open pit deposit. Decreased gold production was reported at the Pierina Mine, which was only down by 1% to 28,000 kg (900,000 ounces) (Klapwijk and others, 2003, p. 36).

***Russia.—***Production in Russia grew by almost 4% to 158,000 kg (5.08 million ounces) of gold, moving the country up to the fifth position among the top gold producing countries. Much of the increase can be attributed to higher levels of financing that commercial banks have made to the gold mining industry. In 2002, 48 commercial banks concluded contracts with producers to buy 178,000 kg (5.7 million ounces) of gold, which was 50,000 kg (1.6 million ounces) of gold more than in 2001. Expansions were completed at the Olimpiada Mine, which added over 9,000 kg (300,000 ounces) of gold. In addition, the Julietta Mine finished its first partial year of operation by producing over 3,000 kg (100,000 ounces) of gold (Klapwijk and others, 2003, p. 40).

***South Africa.—***Gold production in South Africa, the world's leading gold–producing nation, rose for the first time since 1993; however, with the increase of gold production in Russia, South Africa's share fell to roughly 15% in 2002 from 30% of world gold output in 1993. Most gold mines maintained or marginally improved output—with an additional boost from the Target Mine, the country's first new underground gold mine in 20 years. In addition, there was higher gold production at the Deep South Mine where expansion plans progressed well. Gold production at the Mponeng Mine increased by about 3,000 kg (100,000 ounces) to 15,000 kg (500,000 ounces) due to more production flexibility, following the commission of four additional raise lines. Higher ore grades at the Beatrix and Driefontein Mines increased gold output by more than 1,000 kg (32,000 ounces).

Some corporate deals concluded in 2002 were motivated, in part, by the introduction of South Africa's new Mineral Bill, which encouraged black ownership. For example, in the Free State district, a number of assets changed hands and at the center of the activity was the black empowerment group, African Rainbow Minerals (ARM). ARM and Harmony Gold Mining Co. Ltd. took control of AngloGold Ltd.'s Free State assests, followed by further consolidation in the Free State district when they also bought Gold Field Ltd.'s St. Helena Mine (Klapwijk and others, 2003, p. 33).

The tonnage and grade of ore milled during 2002 by mines comprising the membership of the Chamber of Mines of South Africa amounted to almost 81.5 billion kilograms at a grade of 4.27 g/t of gold ore; 83 billion kilograms at a grade of 4.13 g/t was milled by Chamber members in 2001.

Of the top 15 gold-producing companies in the world during 2002, 5 were South African. AngloGold Ltd., listed on the Australian Stock Exchange only 3 years earlier, remained the leading gold-producing company in the world. Gold Fields Ltd. was fourth in the world. The other three companies were Harmony Gold Mining Company Ltd. (6th), African Rainbow Minerals (11th), and Durban Roodepoort Deep Limited (13th). Durban Roodepoort Deep also was listed on the Australian Stock Exchange just 3 years before in March 1999 (Klapwijk and others, 2003, p. 3).

***Uzbekistan.—***Gold production in Uzbekistan rose slightly to 90,000 kg (2.9 million ounces). In its 35th year of operation, the giant open pit, state-owned Muruntau Mine in the Kyzyl Kum Desert reported gold production of about 58,000 kg (1.9 million ounces) of gold in 2002, up 2% from 2001. Gold output at the Zarafshan-Newmont Gold joint venture (which processes high-grade gold tailings from Muruntau) also reported an increase in gold recovered, primarily due to higher than expected leach ore grade (Klapwijk and others, 2003, p. 40).

## Outlook

Consolidation will continue in the gold industry worldwide as gold producers seek to secure their assets, cut costs, and exploit higher gold prices. The U.S. gold industry, which has been closing its gold mines (10 in 1999, 12 more in 2000, 11 in 2001, and another 9 in 2002), also will continue to consolidate. With sustained higher gold prices in 2003, world exploration spending for new gold resources is expected to stabilize in 2003 after several consecutive years of decreases. A modest increase in exploration may occur during 2004, with most of the increase taking place in Latin America.

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TABLE 1
SALIENT GOLD STATISTICS[1]

| | | 1998 | 1999 | 2000 | 2001 | 2002 |
|---|---|---|---|---|---|---|
| United States: | | | | | | |
| Mine production | kilograms | 366,000 | 341,000 | 353,000 | 335,000 | 298,000 |
| Value | thousands | $3,480,000 | $3,070,000 | $3,180,000 | $2,940,000 | $2,980,000 |
| Gold recovered by cyanidation: | | | | | | |
| Extracted in vats, tanks, closed containers[2] | kilograms | 242,000 | 190,000 | 142,000 | 117,000 | 99,600 |
| Leached in open heaps or dumps[3] | do. | 99,300 | 130,000 | 194,000 | 195,000 | 177,000 |
| Refinery production: | | | | | | |
| Concentrates and doré | do. | 277,000 | 265,000 | 197,000 | 191,000 | 196,000 |
| Recycled materials (new and old scrap) | do. | 163,000 | 143,000 | 81,600 | 82,700 | 78,100 |
| Exports, refined | do. | 430,000 | 435,000 | 440,000 | 395,000 | 185,000 |
| Imports for consumption, refined | do. | 257,000 | 196,000 | 184,000 | 161,000 | 172,000 |
| Net deliveries from foreign stocks in Federal Reserve Bank of New York | do. | 310,000 | 303,000 | 356,000 | 259,000 | 40,000 |
| Stocks, December 31: | | | | | | |
| Industry[4] | do. | 16,600 | 14,700 | 9,300 | 3,700 | 3,500 |
| Commodity Exchange (Comex)[5] | do. | 25,200 | 37,900 | 52,900 | 38,000 r | 63,900 |
| Department of the Treasury | metric tons | 8,130 | 8,170 | 8,140 | 8,120 | 8,140 |
| Volume of U.S. Gold Futures Trading[6] | do. | 28,600 | 29,800 | 20,600 | 21,100 | 28,000 |
| Department of the Treasury:[7] | | | | | | |
| American Eagle gold coin | kilograms | 49,200 | 78,200 | 13,900 | 10,700 | 12,500 |
| Other numismatic gold coins | do. | 86 | 430 | 330 | 250 | 370 |
| Consumption in industry and the arts | do. | 219,000 | 245,000 | 183,000 | 179,000 | 163,000 |
| Apparent demand, refined[8] | do. | 667,000 | 399,000 | 337,000 | 257,000 | 264,000 |
| Price, average per troy ounce[9] | | $295.24 | $279.91 | $280.10 | $272.22 | $311.33 |
| Employment, mine and mill only[10] | | 13,400 | 10,300 | 10,400 | 9,500 | 7,600 |
| World: | | | | | | |
| Production, mine | kilograms | 2,500,000 | 2,570,000 r | 2,590,000 r | 2,600,000 r | 2,550,000 e |
| Official bullion reserves[11] | metric tons | 33,600 | 33,500 | 33,000 | 33,000 | 32,200 |

[r]Revised.
[1]Data are rounded to no more than three significant digits, except prices.
[2]May include small quantities recovered by gravity methods.
[3]May include tailings, waste-ore dumps, and previously mined ore at some inactive mines.
[4]Unfabricated refined gold held by refiners, fabricators, dealers, and the U.S. Department of Defense.
[5]Commodity Exchange (Comex) Division of the New York Mercantile Exchange.
[6]Comex only.
[7]Fiscal year bullion disbursements to U.S. Mint coin programs. Fiscal year begins October 1, of year prior to year indicated.
[8]Defined as refinery production from primary materials plus refinery production from old scrap plus net bullion flow to market from foreign stocks at the New York Federal Reserve Bank plus net imports of bullion. Assumed to include gold held for investment purposes. Excludes gold contained in fabricated items, imported coins, and official monetary gold.
[9]Engelhard Corp. industries quotation.
[10]Data from Mine Safety and Health Administration.
[11]Held by central banks, governments, and international monetary organizations. Data from International Monetary Fund.

TABLE 2
MINE PRODUCTION OF GOLD IN THE UNITED STATES, BY STATE[1]

(Kilograms)

| State | 2001 | 2002 |
|---|---|---|
| Alaska[2] | 16,700 | W |
| Arizona | W | W |
| California | 13,800 | 9,180 |
| Idaho | W | W |
| Montana | W | W |
| Nevada | 253,000 | 240,000 |
| South Dakota | W | W |
| Washington | 1,700 | W |
| Other States[3] | 49,600 | 48,500 |
| Total | 335,000 | 298,000 |

W Withheld to avoid disclosing company proprietary data, included with "Other States."
[1]Data are rounded to no more than three significant digits; may not add to totals shown.
[2]Production data collected by the State.
[3]Includes Colorado, New Mexico, South Carolina, Utah, Wisconsin, and States indicated by symbol W.

TABLE 3

LEADING GOLD-PRODUCING MINES IN THE UNITED STATES IN 2002, IN ORDER OF OUTPUT[1]

| Rank | Mine | County and State | Operator | Kilograms |
|---|---|---|---|---|
| 1 | Newmont Nevada Operations[2] | Various counties, NV | Newmont Gold Company | 77,800 |
| 2 | Betze-Post/Goldstrike | Eureka, NV | Barrick Gold Corporation | 43,900 |
| 3 | Cortez | Lander, NV | Placer Dome Inc. | 33,600 |
| 4 | Round Mountain | Nye, NV | Round Mountain Gold Corporation | 23,500 |
| 5 | Meikle/Goldstrike | Elko, NV | Barrick Gold Corporation | 19,900 |
| 6 | Bingham Canyon[3] | Salt Lake, UT | Kennecott Utah Copper Corp. | 12,800 |
| 7 | Fort Knox[4] | Fairbanks, AK | Fairbanks Gold Mining Inc. | 12,800 |
| 8 | Jerritt Canyon | Elko, NV | Independence Mining Company, Inc. | 10,500 |
| 9 | Cresson | Teller, CO | Cripple Creek & Victor Gold Mining Co. | 7,000 |
| 10 | Bald Mountain | White Pine, NV | Placer Dome Inc. | 5,360 |
| 11 | Golden Sunlight | Jefferson, MT | do. | 3,480 |
| 12 | Greens Creek | Juneau, AK | Kennecott Greens Creek Mining Co. | 3,190 |
| 13 | Denton-Rawhide | Mineral, NV | Kennecott Rawhide Mining Co. | 2,590 |
| 14 | Marigold | Humboldt, NV | Glamis Gold Ltd. | 2,590 |
| 15 | Wharf | Lawrence, SD | Wharf Resources, Ltd. | 2,550 |
| 16 | Barney's Canyon | Salt Lake, UT | Kennecott Barney's Canyon Mining Co. | 2,330 |
| 17 | Rochester | Pershing, NV | Coeur d'Alene Mines Corp. | 2,240 |
| 18 | Rand | Kern, CA | Glamis Rand Mining Co. | 2,080 |
| 19 | Briggs | Inyo, CA | Canyon Resources Corp. | 1,770 |
| 20 | Castle Mountain | San Bernardino, CA | Viceroy Resources Corporation | 1,750 |
| 21 | Getchell | Humboldt, NV | Placer Dome Inc. | 1,740 |
| 22 | Kettle River | Ferry, WA | Echo Bay Mines Limited | 953 |
| 23 | Illinois Creek[5] | Yukon-Koyukuk, AK | American Reclamation Group LLC | 824 |
| (6) | Florida Canyon | Pershing, NV | Florida Canyon Mining, Inc. | W |
| (6) | McCoy/Cove | Lander, NV | Echo Bay Mines Limited | W |
| (6) | McLaughlin | Napa, Yolo, CA | Barrick Gold Corporation[7] | W |
| (6) | Mesquite | Imperial, CA | Newmont Gold Company | W |
| (6) | Midas[8] | Elko, NV | Euro-Nevada Mining Co. | W |
| (6) | Montana Tunnels | Jefferson, MT | Montana Tunnels Mining, Inc. | W |
| (6) | Ruby Hill | Eureka, NV | Homestake Mining Company | W |

W Withheld to avoid disclosing company proprietary data.

[1]Data are rounded to no more than three significant digits; these mines accounted for more than 99% of the U.S. gold production in 2002.

[2]Includes Battle Mountain Gold, Carlin Mines Complex, Lone Tree, Twin Creeks, and Reona.

[3]Mine production refers to total quantity of gold produced in concentrates.

[4]Mine production refers to gold equivalent produced.

[5]Estimated from State annual report.

[6]Production at Florida Canyon, McCoy/Cove, McLaughlin, Mesquite, Midas, Montana Tunnels, and Ruby Hill are withheld; mines are among the top 30 gold-producing mines in the United States, but are not shown in rank order to avoid disclosing company propriety data.

[7]Revised January 13, 2004.

[8]Formerly Ken Snyder.

Sources: Company annual reports, Securities and Exchange Commission's 10K and 6K reports, and company news releases.

TABLE 4
U.S. EXPORTS OF GOLD, BY COUNTRY[1, 2]

| Year and country | Ores and concentrates[3] Quantity (kilograms) | Ores and concentrates[3] Value (thousands) | Doré and precipitates Quantity (kilograms) | Doré and precipitates Value (thousands) | Refined bullion[4] Quantity (kilograms) | Refined bullion[4] Value (thousands) | Total Quantity (kilograms) | Total Value (thousands) |
|---|---|---|---|---|---|---|---|---|
| 2001 | 362 | $4,680 | 93,900 | $804,000 | 395,000 | $3,300,000 | 489,000 | $4,110,000 |
| 2002: | | | | | | | | |
| Argentina | -- | -- | -- | -- | 17 | 157 | 17 | 157 |
| Armenia | -- | -- | -- | -- | 210 | 1,950 | 210 | 1,950 |
| Australia | -- | -- | -- | -- | 3 | 20 | 3 | 20 |
| Austria | -- | -- | -- | -- | 21 | 220 | 21 | 220 |
| Bahamas, The | -- | -- | -- | -- | 97 | 1,600 | 97 | 1,600 |
| Belgium | -- | -- | -- | -- | 10 | 100 | 10 | 100 |
| Bolivia | -- | -- | -- | -- | 106 | 1,090 | 106 | 1,090 |
| Brazil | -- | -- | -- | -- | 617 | 5,910 | 617 | 5,910 |
| Canada | 4 | 41 | 199 | 1,300 | 768 | 6,380 | 971 | 7,720 |
| China | -- | -- | -- | -- | 25 | 200 | 25 | 200 |
| Colombia | -- | -- | -- | -- | 2 | 18 | 2 | 18 |
| Costa Rica | -- | -- | -- | -- | 207 | 2,020 | 207 | 2,020 |
| Dominican Republic | 519 | 3,700 | 3 | 13 | 7 | 49 | 528 | 3,770 |
| France | -- | -- | -- | -- | 17 | 189 | 17 | 189 |
| Germany | (5) | 4 | -- | -- | 20 | 212 | 21 | 216 |
| Guatemala | -- | -- | -- | -- | 312 | 3,120 | 312 | 3,120 |
| Hong Kong | 15 | 74 | -- | -- | 30 | 282 | 45 | 356 |
| India | 5 | 57 | -- | -- | 4 | 40 | 9 | 97 |
| Ireland | -- | -- | 1 | 3 | 1 | 17 | 2 | 20 |
| Israel | 1 | 10 | 5 | 25 | 2 | 30 | 8 | 66 |
| Italy | -- | -- | 1 | 10 | 1 | 7 | 1 | 17 |
| Japan | (5) | 3 | 28 | 219 | 23 | 205 | 51 | 426 |
| Korea, Republic of | -- | -- | -- | -- | 1,550 | 15,400 | 1,550 | 15,400 |
| Liechtenstein | -- | -- | -- | -- | 6 | 40 | 6 | 40 |
| Luxembourg | -- | -- | -- | -- | 4,980 | 49,600 | 4,980 | 49,600 |
| Malaysia | -- | -- | 16 | 144 | 419 | 4,250 | 435 | 4,390 |
| Mexico | -- | -- | 5 | 27 | 9,700 | 95,900 | 9,700 | 95,900 |
| Netherlands | (5) | 3 | -- | -- | -- | -- | (5) | 3 |
| Pakistan | -- | -- | -- | -- | 59 | 567 | 59 | 567 |
| Peru | -- | -- | -- | -- | 3,210 | 30,300 | 3,210 | 30,300 |
| Philippines | -- | -- | 3 | 13 | (5) | 4 | 3 | 17 |
| Romania | -- | -- | -- | -- | 1 | 8 | 1 | 8 |
| Saudi Arabia | -- | -- | -- | -- | 1 | 13 | 1 | 13 |
| Singapore | -- | -- | 9 | 44 | 15 | 125 | 24 | 169 |
| South Africa | -- | -- | -- | -- | 39 | 216 | 39 | 216 |
| Spain | -- | -- | 7 | 34 | -- | -- | 7 | 34 |
| Sri Lanka | -- | -- | -- | -- | 1 | 6 | 1 | 6 |
| Sweden | -- | -- | 11 | 42 | 8 | 81 | 19 | 123 |
| Switzerland | -- | -- | 71,400 | 718,000 | 93,600 | 930,000 | 165,000 | 1,650,000 |
| Taiwan | -- | -- | 3 | 14 | 37 | 314 | 40 | 329 |
| Thailand | -- | -- | -- | -- | 1 | 9 | 1 | 9 |
| Trinidad and Tobago | 3 | 37 | -- | -- | 16 | 189 | 20 | 226 |
| Turkey | -- | -- | -- | -- | 298 | 2,750 | 298 | 2,750 |
| United Arab Emirates | 7 | 80 | -- | -- | 2,750 | 27,100 | 2,760 | 27,200 |
| United Kingdom | 1 | 8 | 8 | 43 | 65,600 | 645,000 | 65,600 | 645,000 |
| Vietnam | -- | -- | -- | -- | 50 | 559 | 50 | 559 |
| Total | 556 | 4,020 | 71,700 | 720,000 | 185,000 | 1,830,000 | 257,000 | 2,550,000 |

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Ash and residues data were zero for listed years.

[3]Includes base metal ores, concentrates, and matte destined for refining.

[4]Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold excluded.

[5]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 5
U.S. EXPORTS OF GOLD, BY COUNTRY[1]

| Year and country | Waste and scrap | | Metal powder | | Gold compounds | |
|---|---|---|---|---|---|---|
| | Quantity (kilograms) | Value (thousands) | Quantity (kilograms) | Value (thousands) | Quantity (kilograms) | Value (thousands) |
| 2001 | 40,300 | $468,000 | 11,600 | $127,000 | 490,000 | $13,000 |
| 2002: | | | | | | |
| Antigua and Barbuda | 1 | 10 | -- | -- | -- | -- |
| Armenia | -- | -- | 163 | 1,570 | -- | -- |
| Aruba | 1 | 10 | -- | -- | -- | -- |
| Australia | 4 | 43 | (2) | 4 | 1,900 | 40 |
| Austria | -- | -- | -- | -- | 17 | 8 |
| Bahamas, The | 4 | 39 | -- | -- | -- | -- |
| Belgium | 3,970 | 5,950 | -- | -- | -- | -- |
| Bolivia | (2) | 3 | -- | -- | -- | -- |
| Botswana | 1 | 11 | -- | -- | -- | -- |
| Brazil | -- | -- | -- | -- | 265 | 8 |
| British Virgin Islands | 1 | 14 | -- | -- | -- | -- |
| Cambodia | 50 | 29 | -- | -- | 18,600 | 216 |
| Canada | 28,000 | 325,000 | 26 | 217 | 167,000 | 4,070 |
| Cayman Islands | 3 | 39 | -- | -- | 720 | 5 |
| Chile | -- | -- | -- | -- | 90 | 3 |
| China | 1 | 40 | 5 | 65 | 21,400 | 127 |
| Colombia | -- | -- | -- | -- | 25,500 | 151 |
| Costa Rica | (2) | 3 | -- | -- | -- | -- |
| Dominican Republic | 22 | 273 | 5 | 24 | 22,300 | 894 |
| France | -- | -- | 9 | 76 | 854 | 15 |
| Germany | 3,660 | 15,500 | 101 | 1,190 | 3,600 | 59 |
| Guatemala | 1,360 | 8,070 | 53 | 603 | -- | -- |
| Hong Kong | 2 | 13 | 24 | 318 | 9,950 | 230 |
| Hungary | -- | -- | -- | -- | 5 | 5 |
| India | -- | -- | 5 | 36 | -- | -- |
| Indonesia | -- | -- | -- | -- | 160 | 3 |
| Ireland | -- | -- | (2) | 4 | 379 | 7 |
| Israel | 5 | 41 | 11 | 65 | 77,500 | 1,030 |
| Italy | 21 | 199 | 2 | 15 | -- | -- |
| Jamaica | 16 | 141 | -- | -- | -- | -- |
| Japan | 34 | 393 | 14 | 170 | 364 | 24 |
| Korea, Republic of | -- | -- | 3 | 28 | 14 | 52 |
| Malaysia | -- | -- | -- | -- | 890 | 16 |
| Mexico | 4 | 36 | 6,460 | 70,100 | 1,380 | 25 |
| Morocco | -- | -- | 4 | 32 | -- | -- |
| Netherlands | -- | -- | -- | -- | 20,500 | 533 |
| Netherlands Antilles | 12 | 138 | -- | -- | -- | -- |
| Peru | -- | -- | 1,110 | 11,700 | -- | -- |
| Romania | -- | -- | -- | -- | 18 | 10 |
| Saudi Arabia | 50 | 375 | -- | -- | -- | -- |
| Singapore | 1 | 15 | 61 | 630 | 8,240 | 148 |
| South Africa | -- | -- | 13 | 93 | -- | -- |
| Sri Lanka | -- | -- | 2 | 9 | -- | -- |
| Saint Lucia | 1 | 19 | -- | -- | -- | -- |
| Sweden | 103 | 3,450 | -- | -- | -- | -- |
| Switzerland | 4,980 | 36,400 | 2,670 | 18,800 | -- | -- |
| Taiwan | -- | -- | 11 | 127 | 570 | 10 |
| Thailand | -- | -- | 1 | 16 | 790 | 14 |
| United Kingdom | 43,400 | 110,000 | 138 | 1,470 | 33,600 | 841 |
| Venezuela | 24 | 147 | -- | -- | -- | -- |
| Total | 85,800 | 507,000 | 10,900 | 107,000 | 417,000 | 8,550 |

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 6
U.S. IMPORTS FOR CONSUMPTION OF GOLD, BY COUNTRY[1]

| Year and country | Ores and concentrates[2] | | Doré and precipitates | | Refined bullion[3] | | Ash and residues | | Total | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Quantity (kilograms) | Value (thousands) | Quantity (kilograms) | Value (thousands) | Quantity (kilograms) | Value (thousands) | Quantity (kilograms) | Value (thousands) | Quantity (kilograms) | Value (thousands) |
| 2001: | 1,260 | $1,300 | 31,100 | $211,000 | 161,000 | $1,420,000 | 223 | $3,700 | 194,000 | $1,640,000 |
| 2002: | | | | | | | | | | |
| Armenia | -- | -- | -- | -- | 4 | 37 | -- | -- | 4 | 37 |
| Aruba | -- | -- | -- | -- | 1,290 | 12,300 | -- | -- | 1,290 | 12,300 |
| Australia | 21 | 214 | -- | -- | 87 | 712 | -- | -- | 108 | 926 |
| Austria | -- | -- | -- | -- | (4) | 3 | -- | -- | (4) | 3 |
| Belgium | -- | -- | -- | -- | 29 | 297 | -- | -- | 29 | 297 |
| Benin | -- | -- | -- | -- | 8 | 78 | -- | -- | 8 | 78 |
| Bolivia | -- | -- | 306 | 2,330 | -- | -- | -- | -- | 306 | 2,330 |
| Brazil | -- | -- | -- | -- | 16,300 | 161,000 | -- | -- | 16,300 | 161,000 |
| Canada | 2,340 | 24,200 | 10 | 116 | 138,000 | 1,410,000 | -- | -- | 140,000 | 1,430,000 |
| Chile | -- | -- | -- | -- | 5,100 | 50,400 | -- | -- | 5,100 | 50,400 |
| Colombia | -- | -- | 13,000 | 99,900 | 3,210 | 29,600 | -- | -- | 16,200 | 129,000 |
| Congo | -- | -- | 235 | 2,160 | -- | -- | -- | -- | 235 | 2,160 |
| Costa Rica | -- | -- | -- | -- | 5 | 45 | -- | -- | 5 | 45 |
| Dominican Republic | -- | -- | -- | -- | 229 | 1,620 | -- | -- | 229 | 1,620 |
| Ecuador | -- | -- | 22 | 187 | -- | -- | -- | -- | 22 | 187 |
| France | -- | -- | -- | -- | 63 | 554 | -- | -- | 63 | 554 |
| Germany | -- | -- | 144 | 1,730 | 4 | 50 | -- | -- | 148 | 1,780 |
| Ghana | 8 | 80 | (4) | 8 | 7 | 69 | -- | -- | 15 | 157 |
| Guinea | -- | -- | 2 | 15 | -- | -- | -- | -- | 2 | 15 |
| Guyana | -- | -- | -- | -- | 42 | 386 | -- | -- | 42 | 386 |
| Honduras | -- | -- | 5,470 | 42,000 | 1 | 20 | -- | -- | 5,470 | 42,000 |
| Hong Kong | -- | -- | -- | -- | 3 | 31 | -- | -- | 3 | 31 |
| Italy | -- | -- | -- | -- | 1 | 5 | -- | -- | 1 | 5 |
| Japan | -- | -- | -- | -- | 248 | 1,820 | -- | -- | 248 | 1,820 |
| Kazakhstan | -- | -- | -- | -- | 50 | 516 | -- | -- | 50 | 516 |
| Mexico | 352 | 3,270 | 916 | 8,000 | 4,850 | 52,400 | -- | -- | 6,120 | 63,700 |
| Netherlands Antilles | -- | -- | -- | -- | 83 | 778 | -- | -- | 83 | 778 |
| Nicaragua | -- | -- | 2,300 | 17,300 | -- | -- | -- | -- | 2,300 | 17,300 |
| Norway | -- | -- | -- | -- | 510 | 5,050 | -- | -- | 510 | 5,050 |
| Panama | -- | -- | 343 | 2,590 | 139 | 1,210 | -- | -- | 482 | 3,800 |
| Papua New Guinea | -- | -- | -- | -- | 1 | 8 | -- | -- | 1 | 8 |
| Paraguay | -- | -- | -- | -- | 193 | 1,950 | -- | -- | 193 | 1,950 |
| Peru | -- | -- | 16,200 | 130,000 | 127 | 1,170 | -- | -- | 16,300 | 131,000 |
| Singapore | -- | -- | -- | -- | 17 | 189 | -- | -- | 17 | 189 |
| South Africa | -- | -- | -- | -- | 6 | 58 | -- | -- | 6 | 58 |
| Suriname | -- | -- | -- | -- | 54 | 461 | -- | -- | 54 | 461 |
| Switzerland | -- | -- | -- | -- | 728 | 7,710 | -- | -- | 728 | 7,710 |
| Taiwan | -- | -- | -- | -- | 16 | 161 | -- | -- | 16 | 161 |
| Tanzania | -- | -- | (4) | 5 | -- | -- | -- | -- | (4) | 5 |
| Thailand | -- | -- | -- | -- | 3 | 23 | -- | -- | 3 | 23 |
| United Arab Emirates | -- | -- | -- | -- | 150 | 1,410 | -- | -- | 150 | 1,410 |
| United Kingdom | -- | -- | 3,030 | 25,700 | -- | -- | -- | -- | 3,030 | 25,700 |
| Uruguay | -- | -- | -- | -- | 39 | 412 | -- | -- | 39 | 412 |
| Venezuela | -- | -- | 5 | 38 | -- | -- | -- | -- | 5 | 38 |
| Zaire | -- | -- | 188 | 1,700 | -- | -- | -- | -- | 188 | 1,700 |
| Zimbabwe | -- | -- | -- | -- | 133 | 1,300 | -- | -- | 133 | 1,300 |
| Total | 2,720 | 27,700 | 42,200 | 334,000 | 172,000 | 1,740,000 | -- | -- | 217,000 | 2,100,000 |

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Includes base metal ores, concentrates, and matte destined for refining.

[3]Bullion also moves in both directions between U.S. markets and foreign stocks on deposit in the Federal Reserve Bank. Monetary gold excluded.

[4]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 7
U.S. IMPORTS FOR CONSUMPTION OF GOLD, BY COUNTRY[1]

| Year and country | Waste and scrap | | Metal powder | | Gold compounds | |
|---|---|---|---|---|---|---|
| | Quantity (kilograms) | Value (thousands) | Quantity (kilograms) | Value (thousands) | Quantity (kilograms) | Value (thousands) |
| 2001 | 26,400 | $55,800 | 9,450 | $83,200 | 2,240 | $6,590 |
| 2002: | | | | | | |
| Australia | -- | -- | 15 | 165 | -- | -- |
| Bahamas, The | (2) | 4 | -- | -- | -- | -- |
| Belgium | 2 | 21 | -- | -- | -- | -- |
| Bolivia | 29 | 223 | -- | -- | -- | -- |
| Brazil | 3 | 22 | -- | -- | 19 | 121 |
| Burkina | -- | -- | 100 | 2,250 | -- | -- |
| Canada | 1,480 | 13,400 | 4,390 | 41,100 | 503 | 17 |
| Colombia | 393 | 3,250 | 1,850 | 15,200 | -- | -- |
| Costa Rica | 865 | 6,680 | 2 | 13 | -- | -- |
| Dominican Republic | 5,290 | 32,800 | 144 | 970 | -- | -- |
| Ecuador | 146 | 1,000 | 4 | 19 | -- | -- |
| El Salvador | 3 | 17 | -- | -- | -- | -- |
| Finland | -- | -- | 1 | 11 | -- | -- |
| Germany | 5 | 27 | 5 | 64 | 6,340 | 144 |
| Guatemala | 1 | 6 | -- | -- | -- | -- |
| Ghana | -- | -- | 12 | 55 | -- | -- |
| Guyana | 57 | 479 | -- | -- | -- | -- |
| Honduras | -- | -- | 4,010 | 31,800 | -- | -- |
| Hong Kong | 55 | 504 | -- | -- | -- | -- |
| Italy | 2 | 12 | 1 | 23 | -- | -- |
| Jamaica | 1 | 9 | -- | -- | -- | -- |
| Japan | 17 | 229 | -- | -- | 11,200 | 658 |
| Korea, Republic of | 55 | 449 | (2) | 3 | -- | -- |
| Liberia | -- | -- | 19 | 178 | -- | -- |
| Malaysia | 151 | 1,370 | -- | -- | -- | -- |
| Mexico | 1,850 | 9,260 | 2 | 50 | -- | -- |
| Netherlands | 17 | 307 | -- | -- | -- | -- |
| Norway | -- | -- | 159 | 1,460 | -- | -- |
| Panama | 462 | 3,850 | -- | -- | -- | -- |
| Peru | (2) | 8 | -- | -- | -- | -- |
| Philippines | 839 | 254 | -- | -- | -- | -- |
| Sierra Leone | -- | -- | (2) | 3 | -- | -- |
| Singapore | 164 | 113 | 2 | 9 | -- | -- |
| Saint Vincent and the Grenadines | 5 | 21 | -- | -- | -- | -- |
| Switzerland | 3 | 28 | 11 | 102 | -- | -- |
| Taiwan | 1 | 24 | -- | -- | -- | -- |
| United Kingdom | 4 | 48 | (2) | 3 | 48 | 12 |
| Total | 11,900 | 74,400 | 10,700 | 93,500 | 18,100 | 952 |

-- Zero.

[1]Data are rounded to no more than three significant digits; may not add to totals shown.

[2]Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 8
GOLD: WORLD MINE PRODUCTION, BY COUNTRY[1, 2]

(Kilograms)

| Country | 1998 | 1999 | 2000 | 2001 | 2002[e] |
|---|---|---|---|---|---|
| Algeria | -- | -- | -- | 300 | 369 [3] |
| Argentina | 20,400 | 38,515 | 25,954 | 30,630 | 32,486 [3] |
| Armenia | 350 [e] | 400 [e] | 600 | 1,900 | 3,200 |
| Australia | 310,070 | 301,070 | 296,410 | 285,030 | 273,010 [3] |
| Belize[e] | 6 | 6 | 6 | 1 [r, 3] | 1 |
| Benin[e] | 500 | 500 | 500 | 500 | 500 |
| Bolivia | 14,444 | 11,788 | 12,001 | 12,395 | 11,256 [3] |
| Botswana | 1 | 2 | 4 | 2 [r] | 8 [3] |
| Brazil[4] | 49,567 [r] | 52,634 [r] | 50,393 [r] | 53,207 [r] | 50,500 |
| Bulgaria | 1,253 | 1,034 | 1,100 [e] | 1,000 [e] | 1,000 |
| Burkina Faso | 1,091 | 886 | 1,000 [e] | 1,000 [e] | 1,000 |
| Burundi | -- | -- | -- | 415 | 420 |
| Burma | 334 | 267 | 250 [e] | 200 [e] | 200 |
| Cameroon[e] | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Canada | 165,599 | 157,617 | 156,207 | 158,875 [r] | 148,860 [p] |
| Central African Republic[e] | 50 | 41 [3] | 12 [3] | 20 | 20 |
| Chile | 44,980 | 48,069 [r] | 54,143 [r] | 42,673 | 40,000 |
| China[e] | 178,000 | 173,000 | 180,000 | 185,000 | 190,000 |
| Colombia | 18,810 | 43,847 | 37,018 | 21,813 | 20,799 |
| Congo, Brazzaville[e] | 10 | 10 | 10 | 10 | 10 |
| Congo, Kinshasa | 151 | 207 | 52 | 50 | 50 |
| Costa Rica | 742 | 165 | 51 [e] | 100 [e] | 100 |
| Cote d'Ivoire | 3,400 | 2,717 | 3,154 | 3,100 [e] | 2,000 |
| Cuba[e] | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Dominican Republic | 1,424 | 651 | -- | -- | -- |
| Ecuador[5] | 3,500 [e] | 2,026 | 2,871 | 2,297 | 2,300 |
| El Salvador | 98 | 71 [e] | -- | -- [e] | -- |
| Equatorial Guinea[e] | 500 | 500 | 500 | 500 | 500 |
| Eritrea | 573 | 534 | 264 | 270 [e] | 300 |
| Ethiopia[6] | 2,500 | 4,905 | 5,177 | 5,200 [e] | 5,300 |
| Fiji | 3,690 | 4,428 | 3,842 | 3,858 | 3,731 [3] |
| Finland | 5,000 [e] | 5,900 [e] | 4,951 | 5,552 | 4,600 |
| France | 3,793 | 3,600 [e] | 2,632 | 3,000 [e] | 2,800 |
| French Guiana, Guyane | 2,673 | 2,819 | 3,469 [r] | 3,971 [r] | 2,971 [p] |
| Gabon[e, 7] | 70 | 70 | 70 | 70 | 70 |
| Georgia[e] | 700 | 2,000 | 2,000 | 2,000 | 2,000 |
| Ghana | 72,541 | 79,946 | 72,100 | 68,700 | 69,707 [3] |
| Guatemala[e] | 100 | 4,449 [3] | 4,500 | 4,500 | 4,500 |
| Guinea | 7,835 | 12,001 | 13,104 | 13,000 [e] | 13,500 |
| Guyana | 12,960 | 12,905 | 13,510 | 14,183 | 12,000 |
| Honduras[e] | 150 | 879 [3] | 878 [3] | 880 | 890 |
| India[8] | 2,383 | 2,500 | 6,200 | 3,700 [r] | 3,800 |
| Indonesia[9] | 124,018 | 127,184 | 124,596 | 166,091 [r] | 135,000 |
| Iran | 856 | 930 | 765 [r] | 770 [r, e] | 800 |
| Italy[e] | 1,100 | 700 | 709 [3] | 503 [3] | 500 |
| Jamaica | -- | -- | -- | 214 | 214 |
| Japan | 8,601 | 9,405 | 8,399 [r] | 7,815 [r] | 8,615 [3] |
| Kazakhstan | 18,100 [e] | 20,236 | 28,171 | 27,100 | 27,000 |
| Kenya | 388 [10] | 990 | 1,243 | 1,545 [r] | 1,600 |
| Korea, North[e] | 4,500 [r] | 2,500 [r] | 2,000 [r] | 2,000 [r] | 2,000 |
| Korea, Republic of[8] | 22,822 | 25,730 | 22,608 | 28,595 | 26,181 [3] |
| Kyrgyzstan[e] | 22,000 | 20,000 | 22,000 | 24,000 | 17,000 |
| Liberia[e] | 800 | 1,000 | 1,000 | 1,000 | 800 |
| Madagascar | 12 | 8 [e] | 5 | (11) | -- |
| Malaysia | 3,394 | 3,449 | 4,026 | 3,965 | 4,289 [3] |
| Mali | 20,562 | 23,688 | 28,717 [r] | 42,288 [r] | 57,964 [p] |
| Mexico | 25,427 | 23,755 | 26,375 | 26,300 [e] | 20,617 [3] |
| Mongolia | 9,531 [r] | 10,146 [r] | 11,808 [r] | 13,675 [r] | 12,097 [3] |
| Morocco[e] | 450 | -- | 505 [r] | 1,190 [r] | 2,654 [p] |
| Mozambique | 17 | 20 | 23 | 25 [e] | 25 |

See footnotes at end of table.

TABLE 8--Continued
GOLD: WORLD MINE PRODUCTION, BY COUNTRY[1, 2]

(Kilograms)

| Country | 1998 | 1999 | 2000 | 2001 | 2002[e] |
|---|---|---|---|---|---|
| Namibia | 1,882 | 2,005 | 2,417 | 2,851 | 2,815 [3] |
| New Zealand | 7,544 | 8,577 | 9,880 [r] | 9,885 [r] | 9,770 [3] |
| Nicaragua | 3,834 | 4,450 | 3,672 | 3,650 [e] | 3,660 |
| Niger[e] | 1,000 | 1,000 | 1,000 | 1,000 | 1,000 |
| Nigeria[e] | 10 | 10 | 10 | 10 | 10 |
| Oman | 891 [r] | 884 [r] | 1,029 [r, 8] | 1,000 [r, e] | 1,000 |
| Panama[e] | 1,500 | 1,500 | 1,500 | 1,500 | 1,400 |
| Papua New Guinea | 61,641 [r] | 65,747 [r] | 74,540 [r] | 67,043 [r] | 65,200 [3] |
| Peru[12] | 94,214 | 128,486 | 132,585 | 138,022 | 157,013 [p] |
| Philippines | 34,038 | 31,031 | 36,540 [r] | 33,840 [r] | 40,000 [3] |
| Poland | 409 [r] | 489 [r] | 367 [r] | 349 [r] | 350 |
| Romania[e] | 4,000 | 4,000 | 4,000 | 4,000 | 4,000 |
| Russia | 114,900 | 125,870 | 143,000 | 152,500 [r] | 158,000 [3] |
| Rwanda | 17 | 10 | 10 | 10 [e] | 10 |
| Saudi Arabia | 5,100 | 4,570 | 3,800 [e] | 5,000 [e] | 5,000 |
| Senegal[e] | 550 | 550 | 550 | 550 | 550 |
| Serbia and Montenegro | 2,684 | 1,260 [e] | 1,121 | 1,100 [e] | 1,100 |
| Sierra Leone[e, 13] | 15 [3] | 30 | 30 | 30 | 30 |
| Slovakia | 340 | 363 | 306 | 300 [e] | 300 |
| Solomon Islands | 1,565 | 3,456 | 338 | 300 [e] | 100 |
| South Africa | 465,100 [r] | 451,300 | 430,800 [r] | 394,800 [r] | 399,234 [3] |
| Spain | 3,295 | 5,081 | 4,310 | 3,300 | 3,600 |
| Sudan | 5,671 [r] | 5,566 [r] | 5,774 [r] | 5,417 [r] | 6,000 [3] |
| Suriname[e] | 300 | 300 | 300 [14] | 300 | 300 |
| Sweden | 5,944 | 4,400 | 3,570 [r] | 4,986 [r] | 4,800 [3] |
| Taiwan | 9 | 13 | 9 | 2 | -- |
| Tajikistan[e] | 3,000 [3] | 2,700 | 2,700 | 2,700 | 2,700 |
| Tanzania | 427 | 4,767 | 15,060 | 30,088 [r] | 36,600 |
| Turkey[e, 15] | 1,000 | 1,200 | 500 | 2,000 [r] | 5,000 |
| Uganda | 8 | 5 | 56 | (11) | (11) |
| United States | 366,000 | 341,000 | 353,000 | 335,000 | 298,000 [3] |
| Uruguay | 1,985 | 2,400 [e] | 2,177 [r] | 2,083 [r] | 2,100 |
| Uzbekistan | 80,000 | 85,000 | 85,000 [e] | 87,000 [e] | 90,000 [3] |
| Venezuela | 6,740 | 5,946 | 7,332 | 9,076 | 9,000 |
| Vietnam[e] | 1,500 | 1,500 | 2,000 | 3,000 [r] | 3,000 |
| Zambia[e] | 765 | 700 [e] | 600 [e] | 130 | 150 |
| Zimbabwe | 25,175 | 27,666 | 22,070 | 18,050 | 15,469 [3] |
| Total | 2,500,000 | 2,570,000 [r] | 2,590,000 [r] | 2,600,000 [r] | 2,550,000 |

[e]Estimated. [p]Preliminary. [r]Revised. -- Zero.

[1]World totals, U.S. data, and estimated data are rounded to no more than three significant digits; may not add to totals shown.

[2]Table includes data available through August 7, 2003.

[3]Reported figure.

[4]Officially reported figures are as follows, in kilograms: Major companies: 1998--37,787; 1999--42,367; 2000--42,025; 2001--46,001 (revised); 2002--42,000 (estimated). Garimpos 1998--11,780 (revised); 1999--10,267 (revised); 2000--8,368 (revised); 2001--7,206 (revised); 2002--8,500 (estimated).

[5]Includes undocumented artisanal production.

[6]Year ending July 7 of that stated.

[7]Undocumented artisanal production.

[8]Refinery output.

[9]Excludes production from so-called people's mines, which may be as much as 18,000 kilograms per year, but includes gold recovered as byproduct of copper mining.

[10]Reported exports.

[11]Less than 1/2 unit.

[12]Includes documented production from placer artisanal production.

[13]Data are based on official exports and do not reflect gold moved through undocumented channels.

[14]Government estimates unreported production as high as 30,000 kilograms.

[15]Indicates byproduct of base metals.